```
Met Leu Phe Lys Leu Leu Gln Arg Gln Thr Tyr Thr Cys Leu Ser His
1               5                   10                  15


Arg Tyr Gly Leu Tyr Val Cys Phe Leu Gly Val Val Val Thr Ile Val
              20              25                  30


Ser Ala Phe Gln Phe Gly Glu Val Val Leu Glu Trp Ser Arg Asp Gln
          35              40                  45


Tyr His Val Leu Phe Asp Ser Tyr Arg Asp Asn Ile Ala Gly Lys Ser
    50              55                  60


Phe Gln Asn Arg Leu Cys Leu Pro Met Pro Ile Asp Val Val Tyr Thr
65              70                  75                  80


Trp Val Asn Gly Thr Asp Leu Glu Leu Leu Lys Glu Leu Gln Gln Val
              85                  90                  95


Arg Glu Gln Met Glu Glu Glu Gln Lys Ala Met Arg Glu Ile Leu Gly
          100                 105                 110


Lys Asn Thr Thr Glu Pro Thr Lys Lys Ser Glu Lys Gln Leu Glu Cys
          115                 120                 125


Leu Leu Thr His Cys Ile Lys Val Pro Met Leu Val Leu Asp Pro Ala
    130                 135                 140


Leu Pro Ala Asn Ile Thr Leu Lys Asp Val Pro Ser Leu Tyr Pro Ser
145                 150                 155                 160


Phe His Ser Ala Ser Asp Ile Phe Asn Val Ala Lys Pro Lys Asn Pro
              165                 170                 175


Ser Thr Asn Val Ser Val Val Val Phe Asp Ser Thr Lys Asp Val Glu
          180                 185                 190


Asp Ala His Ser Gly Leu Leu Lys Gly Asn Ser Arg Gln Thr Val Trp
          195                 200                 205


Arg Gly Tyr Leu Thr Thr Asp Lys Glu Val Pro Gly Leu Val Leu Met
    210                 215                 220


Gln Asp Leu Ala Phe Leu Ser Gly Phe Pro Pro Thr Phe Lys Glu Thr
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Asn Gln Leu Lys Thr Lys Leu Pro Glu Asn Leu Ser Ser Lys Val Lys
            245   250   255

Leu Leu Gln Leu Tyr Ser Glu Ala Ser Val Ala Leu Leu Lys Leu Asn
            260   265   270

Asn Pro Lys Asp Phe Gln Glu Leu Asn Lys Gln Thr Lys Lys Asn Met
            275   280   285

Thr Ile Asp Gly Lys Glu Leu Thr Ile Ser Pro Ala Tyr Leu Leu Trp
    290   295   300

Asp Leu Ser Ala Ile Ser Gln Ser Lys Gln Asp Glu Asp Ile Ser Ala
305   310   315   320

Ser Arg Phe Glu Asp Asn Glu Glu Leu Arg Tyr Ser Leu Arg Ser Ile
            325   330   335

Glu Arg His Ala Pro Trp Val Arg Asn Ile Phe Ile Val Thr Asn Gly
            340   345   350

Gln Ile Pro Ser Trp Leu Asn Leu Asp Asn Pro Arg Val Thr Ile Val
    355   360   365

Thr His Gln Asp Val Phe Arg Asn Leu Ser His Leu Pro Thr Phe Ser
    370   375   380

Ser Pro Ala Ile Glu Ser His Ile His Arg Ile Glu Gly Leu Ser Gln
385   390   395   400

Lys Phe Ile Tyr Leu Asn Asp Asp Val Met Phe Gly Lys Asp Val Trp
            405   410   415

Pro Asp Asp Phe Tyr Ser His Ser Lys Gly Gln Lys Val Tyr Leu Thr
            420   425   430

Trp Pro Val Pro Asn Cys Ala Glu Gly Cys Pro Gly Ser Trp Ile Lys
            435   440   445

Asp Gly Tyr Cys Asp Lys Ala Cys Asn Asn Ser Ala Cys Asp Trp Asp
            450   455   460

Gly Gly Asp Cys Ser Gly Asn Ser Gly Gly Ser Arg Tyr Ile Ala Gly
465   470   475   480

Gly Gly Gly Thr Gly Ser Ile Gly Val Gly His Pro Trp Gln Phe Gly
                485   490   495

Gly Gly Ile Asn Ser Val Ser Tyr Cys Asn Gln Gly Cys Ala Asn Ser
            500   505   510

Trp Leu Ala Asp Lys Phe Cys Asp Gln Ala Cys Asn Val Leu Ser Cys
            515   520   525

Gly Phe Asp Ala Gly Asp Cys Gly Gln Asp His Phe His Glu Leu Tyr
    530   535   540

Lys Val Ile Leu Leu Pro Asn Gln Thr His Tyr Ile Ile Pro Lys Gly
545   550   555   560

Glu Cys Leu Pro Tyr Phe Ser Phe Ala Glu Val Ala Lys Arg Gly Val
                565   570   575

Glu Gly Ala Tyr Ser Asp Asn Pro Ile Ile Arg His Ala Ser Ile Ala
            580   585   590

Asn Lys Trp Lys Thr Ile His Leu Ile Met His Ser Gly Met Asn Ala
        595   600   605

Thr Thr Ile His Phe Asn Leu Thr Phe Gln Asn Thr Asn Asp Glu Glu
    610   615   620

Phe Lys Met Gln Ile Thr Val Glu Val Asp Thr Arg Glu Gly Pro Lys
625   630   635   640

Leu Asn Ser Thr Ala Gln Lys Gly Tyr Glu Asn Leu Val Ser Pro Ile
            645   650   655

Thr Leu Leu Pro Glu Ala Glu Ile Leu Phe Glu Asp Ile Pro Lys Glu
            660   665   670

Lys Arg Phe Pro Lys Phe Lys Arg His Asp Val Asn Ser Thr Arg Arg
        675   680   685

Ala Gln Glu Glu Val Lys Ile Pro Leu Val Asn Ile Ser Leu Leu Pro
    690   695   700

Lys Asp Ala Gln Leu Ser Leu Asn Thr Leu Asp Leu Gln Leu Glu His
705   710   715   720

Gly Asp Ile Thr Leu Lys Gly Tyr Asn Leu Ser Lys Ser Ala Leu Leu
                725   730   735

-3-

Arg Ser Phe Leu Met Asn Ser Gln His Ala Lys Ile Lys Asn Gln Ala
        740   745   750

Ile Ile Thr Asp Glu Thr Asn Asp Ser Leu Val Ala Pro Gln Glu Lys
        755   760   765

Gln Val His Lys Ser Ile Leu Pro Asn Ser Leu Gly Val Ser Glu Arg
        770   775   780

Leu Gln Arg Leu Thr Phe Pro Ala Val Ser Val Lys Val Asn Gly His
785   790   795   800

Asp Gln Gly Gln Asn Pro Pro Leu Asp Leu Glu Thr Thr Ala Arg Phe
                805   810   815

Arg Val Glu Thr His Thr Gln Lys Thr Ile Gly Gly Asn Val Thr Lys
                820   825   830

Glu Lys Pro Pro Ser Leu Ile Val Pro Leu Glu Ser Gln Met Thr Lys
        835   840   845

Glu Lys Lys Ile Thr Gly Lys Glu Lys Glu Asn Ser Arg Met Glu Glu
        850   855   860

Asn Ala Glu Asn His Ile Gly Val Thr Glu Val Leu Leu Gly Arg Lys
865   870   875   880

Leu Gln His Tyr Thr Asp Ser Tyr Leu Gly Phe Leu Pro Trp Glu Lys
                885   890   895

Lys Lys Tyr Phe Gln Asp Leu Leu Asp Glu Glu Glu Ser Leu Lys Thr
                900   905   910

Gln Leu Ala Tyr Phe Thr Asp Ser Lys Asn Thr Gly Arg Gln Leu Lys
        915   920   925

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Asp Thr Phe Ala Asp Ser Leu Arg Tyr Val Asn Lys Ile Leu Asn Ser
1   5   10   15

Lys Phe Gly Phe Thr Ser Arg Lys Val Pro Ala His Met Pro His Met
                20   25   30

Ile Asp Arg Ile Val Met Gln Glu Leu Gln Asp Met Phe Pro Glu Glu
        35   40   45

-4-

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Phe Asp Lys Thr Ser Phe His Lys Val Arg His Ser Glu Asp Met Gln
    50              55              60

Phe Ala Phe Ser Tyr Phe Tyr Tyr Leu Met Ser Ala Val Gln Pro Leu
65              70              75              80

Asn Ile Ser Gln Val Phe Asp Glu Val Asp Thr Asp Gln Ser Gly Val
            85              90              95

Leu Ser Asp Arg Glu Ile Arg Thr Leu Ala Thr Arg Ile His Glu Leu
            100             105             110

Pro Leu Ser Leu Gln Asp Leu Thr Gly Leu Glu His Met Leu Ile Asn
        115             120             125

Cys Ser Lys Met Leu Pro Ala Asp Ile Thr Gln Leu Asn Asn Ile Pro
        130             135             140

Pro Thr Gln Glu Ser Tyr Tyr Asp Pro Asn Leu Pro Pro Val Thr Lys
145             150             155             160

Ser Leu Val Thr Asn Cys Lys Pro Val Thr Asp Lys Ile His Lys Ala
            165             170             175

Tyr Lys Asp Lys Asn Lys Tyr Arg Phe Glu Ile Met Gly Glu Glu Glu
        180             185             190

Ile Ala Phe Lys Met Ile Arg Thr Asn Val Ser His Val Val Gly Gln
        195             200             205

Leu Asp Asp Ile Arg Lys Asn Pro Arg Lys Phe Val Cys Leu Asn Asp
    210             215             220

Asn Ile Asp His Asn His Lys Asp Ala Gln Thr Val Lys Ala Val Leu
225             230             235             240

Arg Asp Phe Tyr Glu Ser Met Phe Pro Ile Pro Ser Gln Phe Glu Leu
            245             250             255

Pro Arg Glu Tyr Arg Asn Arg Phe Leu His Met His Glu Leu Gln Glu
            260             265             270

Trp Arg Ala Tyr Arg Asp Lys Leu Lys Phe Trp Thr His Cys Val Leu
        275             280             285

Ala Thr Leu Ile Met Phe Thr Ile Phe Ser Phe Phe Ala Glu Gln Leu
    290             295             300
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Ile Ala Leu Lys Arg Lys Ile Phe Pro Arg Arg Arg Ile His Lys Glu
305             310             315             320

Ala Ser Pro Asn Arg Ile Arg Val
                325


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<223>

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Met Ala Ala Gly Leu Ala Arg Leu Leu Leu Leu Leu Gly Leu Ser Ala
1             5                 10                15

Gly Gly Pro Ala Pro Ala Gly Ala Ala Lys Met Lys Val Val Glu Glu
            20                25                30

Pro Asn Ala Phe Gly Val Asn Asn Pro Phe Leu Pro Gln Ala Ser Arg
         35                40                45

Leu Gln Ala Lys Arg Asp Pro Ser Pro Val Ser Gly Pro Val His Leu
    50                55                60

Phe Arg Leu Ser Gly Lys Cys Phe Ser Leu Val Glu Ser Thr Tyr Lys
65                70                75                80

Tyr Glu Phe Cys Pro Phe His Asn Val Thr Gln His Glu Gln Thr Phe
                85                90                95

Arg Trp Asn Ala Tyr Ser Gly Ile Leu Gly Ile Trp His Glu Trp Glu
         100               105               110

Ile Ala Asn Asn Thr Phe Thr Gly Met Trp Met Arg Asp Gly Asp Ala
    115               120               125

Cys Arg Ser Arg Ser Arg Gln Ser Lys Val Glu Leu Ala Cys Gly Lys
    130               135               140

Ser Asn Arg Leu Ala His Val Ser Glu Pro Ser Thr Cys Val Tyr Ala
145               150               155               160

Leu Thr Phe Glu Thr Pro Leu Val Cys His Pro His Ala Leu Leu Val
                165               170               175

Tyr Pro Thr Leu Pro Glu Ala Leu Gln Arg Gln Trp Asp Gln Val Glu
                180               185               190
```

Gln Asp Leu Ala Asp Glu Leu Ile Thr Pro Gln Gly His Glu Lys Leu
        195   200   205

Leu Arg Thr Leu Phe Glu Asp Ala Gly Tyr Leu Lys Thr Pro Glu Glu
        210   215   220

Asn Glu Pro Thr Gln Leu Glu Gly Gly Pro Asp Ser Leu Gly Phe Glu
225   230   235   240

Thr Leu Glu Asn Cys Arg Lys Ala His Lys Glu Leu Ser Lys Glu Ile
                245   250   255

Lys Arg Leu Lys Gly Leu Leu Thr Gln His Gly Ile Pro Tyr Thr Arg
        260   265   270

Pro Thr Glu Thr Ser Asn Leu Glu His Leu Gly His Glu Thr Pro Arg
        275   280   285

Ala Lys Ser Pro Glu Gln Leu Arg Gly Asp Pro Gly Leu Arg Gly Ser
    290   295   300

Leu
305

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ggcggctcag gctcctcggg gcgtggcgtg gcggtgaagg ggtgatgctg ttcaagctcc   180
tgcagagaca aacctatacc tgcctgtccc acaggtatgg gctctacgtg tgcttcttgg   240
gcgtcgttgt caccatcgtc tccgccttcc agttcggaga ggtggttctg gaatggagcc   300
gagatcaata ccatgttttg tttgattcct atagagacaa tattgctgga aagtcctttc   360
agaatcggct ttgtctgccc atgccgattg acgttgttta cacctgggtg aatggcacag   420
atcttgaact actgaaggaa ctacagcagg tcagagaaca gatggaggag gagcagaaag   480
caatgagaga atccttgggg aaaaacacaa cggaacctac taagaagagt gagaagcagt   540
tagagtgttt gctaacacac tgcattaagg tgccaatgct tgtactggac ccagccctgc   600
cagccaacat caccctgaag gacgtgccat ctctttatcc ttcttttcat tctgccagtg   660
acattttcaa tgttgcaaaa ccaaaaaacc cttctaccaa tgtctcagtt gttgtttttg   720
acagtactaa ggatgttgaa gatgcccact ctggactgct taaaggaaat agcagacaga   780
cagtatggag ggggtacttg acaacagata agaagtccc tggattagtg ctaatgcaag   840
atttggcttt cctgagtgga tttccaccaa cattcaagga aacaaatcaa ctaaaaacaa   900

-7-

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aattgccaga aaatctttcc tctaaagtca aactgttgca gttgtattca gaggccagtg      960

tagcgcttct aaaactgaat aaccccaagg attttcaaga attgaataag caaactaaga     1020

agaacatgac cattgatgga aaagaactga ccataagtcc tgcatattta ttatgggatc     1080

tgagcgccat cagccagtct aagcaggatg aagacatctc tgccagtcgt tttgaagata     1140

acgaagaact gaggtactca ttgcgatcta tcgagaggca tgcaccatgg gttcggaata     1200

ttttcattgt caccaacggg cagattccat cctggctgaa ccttgacaat cctcgagtga     1260

caatagtaac acaccaggat gtttttcgaa atttgagcca cttgcctacc tttagttcac     1320

ctgctattga aagtcacatt catcgcatcg aagggctgtc ccagaagttt atttacctaa     1380

atgatgatgt catgtttggg aaggatgtct ggccagatga tttttacagt cactccaaag     1440

gccagaaggt ttatttgaca tggcctgtgc caaactgtgc cgagggctgc ccaggttcct     1500

ggattaagga tggctattgt gacaaggctt gtaataattc agcctgcgat tgggatggtg     1560

gggattgctc tggaaacagt ggagggagtc gctatattgc aggaggtgga ggtactggga     1620

gtattggagt tggacacccc tggcagtttg gtggaggaat aaacagtgtc tcttactgta     1680

atcagggatg tgcgaattcc tggctcgctg ataagttctg tgaccaagca tgcaatgtct     1740

tgtcctgtgg gtttgatgct ggcgactgtg ggcaagatca ttttcatgaa ttgtataaag     1800

tgatccttct cccaaaccag actcactata ttattccaaa aggtgaatgc ctgccttatt     1860

tcagctttgc agaagtagcc aaaagaggag ttgaaggtgc ctatagtgac aatccaataa     1920

ttcgacatgc ttctattgcc aacaagtgga aaaccatcca cctcataatg cacagtggaa     1980

tgaattccac cacaatacat tttaatctca cgtttcaaaa tacaaacgat gaagagttca     2040

aaatgcagat aacagtggag gtggacacaa gggagggacc aaaactgaat tctacggccc     2100

agaagggtta cgaaaattta gttagtccca taacacttct tccagaggcg aaatcctttt     2160

ttgaggatat tcccaaagaa aaacgcttcc cgaagtttaa gagacatgat gttaactcaa     2220

caaggagagc ccaggaagag gtgaaaattc ccctggtaaa tatttcactc cttccaaaag     2280

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agaggttgac ttttcctgca gtgagtgtaa aagtgaatgg tcatgaccag ggtcagaatc     2580

cacccctgga cttggagacc acagcaagat ttagagtgga aactcacacc caaaaaacca     2640

taggcggaaa tgtgacaaaa gaaaagcccc catctctgat tgttccactg gaaagccaga     2700

tgacaaaaga aaagaaaatc acagggaaag aaaaagagaa cagtagaatg gaggaaaatg     2760
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-8-

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ctgaaaatca cataggcgtt actgaagtgt tacttggaag aaagctgcag cattacacag    2820

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aagaagagtc attgaagaca caattggcat acttcactga tagcaaaaat actgggaggc    2940

aactaaaaga tacatttgca gattccctca gatatgtaaa taaaattcta aatagcaagt    3000

ttggattcac atcgcggaaa gtccctgctc acatgcctca catgattgac cggattgtta    3060

tgcaagaact gcaagatatg ttccctgaag aatttgacaa gacgtcattt cacaaagtgc    3120

gccattctga ggatatgcag tttgccttct cttattttta ttatctcatg agtgcagtgc    3180

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ctgacagaga aatccgaaca ctggctacca gaattcacga actgccgtta agtttgcagg    3300

atttgacagg tctggaacac atgctaataa attgctcaaa aatgcttcct gctgatatca    3360

cgcagctaaa taatattcca ccaactcagg aatcctacta tgatcccaac ctgccaccgg    3420

tcactaaaag tctagtaaca aactgtaaac cagtaactga caaaatccac aaagcatata    3480

aggaaaaaa caaatatagg tttgaaatca tgggagaaga agaaatcgct tttaaaatga    3540

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ctgttctcag ggacttctat gaatccatgt tccccatacc ttcccaattt gaactgccaa    3720

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gcttagcagt ttggcccgaa gaaggaaaat atccagtacc atgctgtttt gtggcatgaa    4080

tatagcccac tgactaggaa ttatttaacc aacccactga aaacttgtgt gtcgagcagc    4140

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ggctcactga caagagacag ctgttaattt cccacagcaa tcattgcaga ctaactttat    4260

taggagaagc ctatgccagc tgggagtgat tgctaagagg ctccagtctt tgcattccaa    4320

agcctttgc taaagttttg cactttttt ttttcatttc ccatttttaa gtagttacta    4380

agttaactag ttattcttgc ttctgagtat aacgaattgg gatgtctaaa cctattttta    4440

tagatgttat ttaaataatg cagcaatatc acctcttatt gacaatacct aaattatgag    4500

ttttattaat atttaagact gtaaatggtc ttaaaccact aactactgaa gagctcaatg    4560

attgacatct gaaatgcttt gtaattattg acttcagccc ctaagaatgc tatgatttca    4620
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ctggcacatt acagtggtgt cttgtttaat actcattggt atattccagt agctatctct    4800

ctcagttggt ttttgataga acagaggcca gcaaactttc tttgtaaaag gctggttagt    4860

aaattattgc aggccacctg tgtctttgtc atacattctt cttgctgttg tttagtttgt    4920

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actgcccacc agccagatgt gaccctcagg ccatcatttg ccaatcactg agaattattt    5040

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tcagccttct gagtagctgg gactacaggt gcatgccacc acaccctgct aattttttgta    5220

tttttagtag agacggggt tccaccatat tggtcaggct tatcttgaac tcctgacctc    5280

aggtgatcca cctgcctctg cctcccaaag tgctgagatt acaggcataa gccagtgcac    5340

ccagccgaga attagtattt ttatgtatgg ttaaaccttg gcgtctagcc atattttatg    5400

tcataataca atggatttgt gaagagcaga ttccatgagt aactctgaca ggtattttag    5460

atcatgatct caacaatatt cctcccaaat ggcatacatc ttttgtacaa agaacttgaa    5520

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ccaacgcgtt tggggtgaac aacccgttct tgcctcaggc cagtcgcctc caggccaaga    180

gggatccttc acccgtgtct ggacccgtgc atctcttccg actctcgggc aagtgcttca    240

gcctggtgga gtccacgtac aagtatgagt tctgcccgtt ccacaacgtg acccagcacg    300

agcagacctt ccgctggaac gcctacagtg ggatcctcgg catctggcac gagtgggaga    360

tcgccaacaa caccttcacg ggcatgtgga tgagggacgg tgacgcctgc cgttcccgga    420

gccggcagag caaggtggag ctggcgtgtg aaaaagcaa ccggctggcc catgtgtccg    480

agccgagcac ctgcgtctat cgctgacgt tcgagacccc cctcgtctgc cacccccacg    540

ccttgctagt gtacccaacc ctgccagagg ccctgcagcg gcagtgggac caggtagagc    600

aggacctggc cgatgagctg atcacccccc agggccatga gaagttgctg aggacacttt    660

ttgaggatgc tggctactta aagaccccag aagaaatga acccacccag ctggagggag    720
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-10-

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ccacagaaac ttccaacttg gagcacttgg ccacgagac gcccagagcc aagtctccag      900

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aggtggacgc ggccgagagc cctacagaga agctggctgg taggacccgc aggaccagct    1020

gaccaggctt gtgctcagag aagcagacaa aacaaagatt caaggtttta attaattccc    1080

atactgataa aaataactcc atgaattctg taaaccattg cataaatgct atagtgtaaa    1140

aaaatttaaa caagtgttaa ctttaaacag ttcgctacaa gtaaatgatt ataaatacta    1200

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Gly Phe Leu Trp Glu Ala Ser Gly Gly Leu Asp Ser Gly Ala Ser Arg
                20                  25                  30

Asp Asp Asp Leu Leu Leu Pro Tyr Pro Arg Ala Arg Ala Arg Leu Pro
            35                  40                  45

Arg Asp Cys Thr Arg Val Arg Ala Gly Asn Arg Glu His Glu Ser Trp
    50                  55                  60

Pro Pro Pro Pro Ala Thr Pro Gly Ala Gly Gly Leu Ala Val Arg Thr
65                  70                  75                  80

Phe Val Ser His Phe Arg Asp Arg Ala Val Ala Gly His Leu Thr Arg
                85                  90                  95

Ala Val Glu Pro Leu Arg Thr Phe Ser Val Leu Glu Pro Gly Gly Pro
                100                 105                 110

Gly Gly Cys Ala Ala Arg Arg Arg Ala Thr Val Glu Glu Thr Ala Arg
            115                 120                 125

Ala Ala Asp Cys Arg Val Ala Gln Asn Gly Gly Phe Phe Arg Met Asn
    130                 135                 140
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Ser Gly Glu Cys Leu Gly Asn Val Val Ser Asp Glu Arg Arg Val Ser
145             150             155             160


Ser Ser Gly Gly Leu Gln Asn Ala Gln Phe Gly Ile Arg Arg Asp Gly
                165             170             175


Thr Leu Val Thr Gly Tyr Leu Ser Glu Glu Val Leu Asp Thr Glu
                180             185             190


Asn Pro Phe Val Gln Leu Leu Ser Gly Val Val Trp Leu Ile Arg Asn
        195             200             205


Gly Ser Ile Tyr Ile Asn Glu Ser Gln Ala Thr Glu Cys Asp Glu Thr
    210             215             220


Gln Glu Thr Gly Ser Phe Ser Lys Phe Val Asn Val Ile Ser Ala Arg
225             230             235             240


Thr Ala Ile Gly His Asp Arg Lys Gly Gln Leu Val Leu Phe His Ala
            245             250             255


Asp Gly His Thr Glu Gln Arg Gly Ile Asn Leu Trp Glu Met Ala Glu
            260             265             270


Phe Leu Leu Lys Gln Asp Val Val Asn Ala Ile Asn Leu Asp Gly Gly
        275             280             285


Gly Ser Ala Thr Phe Val Leu Asn Gly Thr Leu Ala Ser Tyr Pro Ser
    290             295             300


Asp His Cys Gln Asp Asn Met Trp Arg Cys Pro Arg Gln Val Ser Thr
305             310             315             320


Val Val Cys Val His Glu Pro Arg Cys Gln Pro Pro Asp Cys His Gly
            325             330             335


His Gly Thr Cys Val Asp Gly His Cys Gln Cys Thr Gly His Phe Trp
            340             345             350


Arg Gly Pro Gly Cys Asp Glu Leu Asp Cys Gly Pro Ser Asn Cys Ser
        355             360             365


Gln His Gly Leu Cys Thr Glu Thr Gly Cys Arg Cys Asp Ala Gly Trp
    370             375             380


Thr Gly Ser Asn Cys Ser Glu Glu Cys Pro Leu Gly Trp His Gly Pro
385             390             395             400
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Gly Cys Gln Arg Arg Cys Lys Cys Glu His His Cys Pro Cys Asp Pro
                405   410   415

Lys Thr Gly Asn Cys Ser Val Ser Arg Val Lys Gln Cys Leu Gln Pro
                420   425   430

Pro Glu Ala Thr Leu Arg Ala Gly Glu Leu Ser Phe Phe Thr Arg Thr
        435   440   445

Ala Trp Leu Ala Leu Thr Leu Ala Leu Ala Phe Leu Leu Leu Ile Ser
    450   455   460

Ile Ala Ala Asn Leu Ser Leu Leu Leu Ser Arg Ala Glu Arg Asn Arg
465   470   475   480

Arg Leu His Gly Asp Tyr Ala Tyr His Pro Leu Gln Glu Met Asn Gly
                485   490   495

Glu Pro Leu Ala Ala Glu Lys Glu Gln Pro Gly Gly Ala His Asn Pro
                500   505   510

Phe Lys Asp
            515

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ccacgcgcgc gcgcgcgcct cccccgggac tgcacacggg tgcgcgccgg caaccgcgag   180

cacgagagtt ggcctccgcc tcccgcgact cccggcgccg gcggtctggc cgtgcgcacc   240

ttcgtgtcgc acttcaggga ccgcgcggtg gccggccacc tgacgcgggc cgttgagccc   300

ctgcgcacct tctcggtgct ggagcccggt ggacccggcg ctgcgcggc gagacgacgc   360

gccaccgtgg aggagacggc gcgggcggcc gactgccgtg tcgcccagaa cggcggcttc   420

ttccgcatga actcgggcga gtgcctgggg aacgtggtga gcgacgagcg gcgggtgagc   480

agctccgggg ggctgcagaa cgcgcagttc gggatccgcc gcgacgggac cctggtcacc   540

gggtacctgt ctgaggagga ggtgctggac actgagaacc catttgtgca gctgctgagt   600

ggggtcgtgt ggctgattcg taatggaagc atctacatca acgagagcca agccacagag   660

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acggccattg ccacgaccg gaaagggcag ctggtgctct ttcatgcaga cggccatacg   780

gagcagcgtg gcatcaacct gtgggaaatg gcggagttcc tgctgaaaca ggacgtggtc   840

-13-

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ggctgccaga ggcgttgtaa gtgtgagcac cattgtccct gtgaccccaa gactggcaac     1260

tgcagcgtct ccagagtaaa gcagtgtctc cagccacctg aagccaccct gagggcggga     1320

gaactctcct ttttcaccag gaccgcctgg ctagccctca ccctggcgct ggccttcctc     1380

ctgctgatca gcattgcagc aaacctgtcc ttgctcctgt ccagagcaga gaggaaccgg     1440

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gcagagaagg agcagccagg gggcgcccac aacccccttca aggactgaag cctcaagctg     1560

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cgggacccct tttctacaga cctcatcact ggatttgcca actagaattc gatttcctgt     2040

cataggaagc tccttggaag aagggatggg gggatgaaat catgtttaca gacctgtttt     2100

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caccaggtgg tgtgtggatt ctg                                            2183


<210>  8 <211>  328 <212>  PRT <213>  Mus musculus  <400>  8

Asp Thr Phe Ala Asp Ser Leu Arg Tyr Val Asn Lys Ile Leu Asn Ser
1               5                   10                  15


Lys Phe Gly Phe Thr Ser Arg Lys Val Pro Ala His Met Pro His Met
            20                  25                  30


Ile Asp Arg Ile Val Met Gln Glu Leu Gln Asp Met Phe Pro Glu Glu
        35                  40                  45


Phe Asp Lys Thr Ser Phe His Lys Val Arg His Ser Glu Asp Met Gln
```

-14-

Phe Ala Phe Ser Tyr Phe Tyr Tyr Leu Met Ser Ala Val Gln Pro Leu
65   70   75   80

Asn Ile Ser Gln Val Phe His Glu Val Asp Thr Asp Gln Ser Gly Val
                85   90   95

Leu Ser Asp Arg Glu Ile Arg Thr Leu Ala Thr Arg Ile His Asp Leu
            100   105   110

Pro Leu Ser Leu Gln Asp Leu Thr Gly Leu Glu His Met Leu Ile Asn
        115   120   125

Cys Ser Lys Met Leu Pro Ala Asn Ile Thr Gln Leu Asn Asn Ile Pro
    130   135   140

Pro Thr Gln Glu Ala Tyr Tyr Asp Pro Asn Leu Pro Pro Val Thr Lys
145   150   155   160

Ser Leu Val Thr Asn Cys Lys Pro Val Thr Asp Lys Ile His Lys Ala
            165   170   175

Tyr Lys Asp Lys Asn Lys Tyr Arg Phe Glu Ile Met Gly Glu Glu Glu
        180   185   190

Ile Ala Phe Lys Met Ile Arg Thr Asn Val Ser His Val Val Gly Gln
        195   200   205

Leu Asp Asp Ile Arg Lys Asn Pro Arg Lys Phe Val Cys Leu Asn Asp
    210   215   220

Asn Ile Asp His Asn His Lys Asp Ala Arg Thr Val Lys Ala Val Leu
225   230   235   240

Arg Asp Phe Tyr Glu Ser Met Phe Pro Ile Pro Ser Gln Phe Glu Leu
            245   250   255

Pro Arg Glu Tyr Arg Asn Arg Phe Leu His Met His Glu Leu Gln Glu
            260   265   270

Trp Arg Ala Tyr Arg Asp Lys Leu Lys Phe Trp Thr His Cys Val Leu
        275   280   285

Ala Thr Leu Ile Ile Phe Thr Ile Phe Ser Phe Phe Ala Glu Gln Ile
    290   295   300

```
Ile Ala Leu Lys Arg Lys Ile Phe Pro Arg Arg Arg Ile His Lys Glu
305             310             315             320


Ala Ser Pro Asp Arg Ile Arg Val
            325



<210>  9 <211>  307 <212>   PRT <213>   Mus musculus  <400>  9

Met Ala Gly Arg Leu Ala Gly Phe Leu Met Leu Leu Gly Leu Ala Ser
1             5             10             15


Gln Gly Pro Ala Pro Ala Cys Ala Gly Lys Met Lys Val Val Glu Glu
            20             25             30


Pro Asn Thr Phe Gly Leu Asn Asn Pro Phe Leu Pro Gln Ala Ser Arg
        35             40             45


Leu Gln Pro Lys Arg Glu Pro Ser Ala Val Ser Gly Pro Leu His Leu
    50             55             60


Phe Arg Leu Ala Gly Lys Cys Phe Ser Leu Val Glu Ser Thr Tyr Lys
65             70             75             80


Tyr Glu Phe Cys Pro Phe His Asn Val Thr Gln His Glu Gln Thr Phe
                85             90             95


Arg Trp Asn Ala Tyr Ser Gly Ile Leu Gly Ile Trp His Glu Trp Glu
            100             105             110


Ile Ile Asn Asn Thr Phe Lys Gly Met Trp Met Thr Asp Gly Asp Ser
        115             120             125


Cys His Ser Arg Ser Arg Gln Ser Lys Val Glu Leu Thr Cys Gly Lys
    130             135             140


Ile Asn Arg Leu Ala His Val Ser Glu Pro Ser Thr Cys Val Tyr Ala
145             150             155             160


Leu Thr Phe Glu Thr Pro Leu Val Cys His Pro His Ser Leu Leu Val
            165             170             175


Tyr Pro Thr Leu Ser Glu Ala Leu Gln Gln Arg Leu Asp Gln Val Glu
            180             185             190


Gln Asp Leu Ala Asp Glu Leu Ile Thr Pro Gln Gly Tyr Glu Lys Leu
        195             200             205
```

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Leu Arg Val Leu Phe Glu Asp Ala Gly Tyr Leu Lys Val Pro Gly Glu
    210                 215             220

Thr His Pro Thr Gln Leu Ala Gly Gly Ser Lys Gly Leu Gly Leu Glu
225                 230             235                 240

Thr Leu Asp Asn Cys Arg Lys Ala His Ala Glu Leu Ser Gln Glu Val
                245             250                 255

Gln Arg Leu Thr Ser Leu Leu Gln Gln His Gly Ile Pro His Thr Gln
        260                 265             270

Pro Thr Glu Thr Thr His Ser Gln His Leu Gly Gln Gln Leu Pro Ile
        275                 280             285

Gly Ala Ile Ala Ala Glu His Leu Arg Ser Asp Pro Gly Leu Arg Gly
    290                 295             300

Asn Ile Leu
305
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cattcgggtg agcggatcac ggtcctgcgg cttggggacc gagcctggct ggttcttctg   180
accttntcaa ttccataggc tgaataaccc gttcttgccc caggcaagcc gccttcagcc   240
caagagagag ccttcagctg tatcccgcaa attaagagaa attaatttca aacgatttag   300
aaagtattct agccaggcga tgatggcgca cgcctttaat cccagcactt gggaggcaga   360
ggcaggcaga tttccgagtt caaggccatc agaactgact gtacatctta gtacagttta   420
gcatgtgatc agagatctga atcacaaagc tgggcctgcg tggtaaagca ggtcctttct   480
aataaggttg cagtttagat tttctttctt aactctttta ttctttgaga cagggtttct   540
caacagtggg tgtcctggaa ctcacttttg taaaccaggc tgcccttaaa ctcacaaagc   600
tctgtcagcc tctgcctcct gagtgctggg attaaaggtc cacaccctgt tcattcattt   660
ttaatttttg agactgggtc tcattatgtg ccctagaca gatactgaga gcctcctcca   720
caggaacaag catgggaatc ctgccacaga caaccagttc tgtggtctgg agatgagttt   780
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ttggggcgtt ctggccttga tggttagtgc cctcctgcca accttagctt ccagctttag   900
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tctcttcaga cttgctggca agtgctttag cctagtggag tccacgtgag tgccaggctg   1020

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agcagagcat ctgcggagtg acccaggact acgtgggaac atcctgtgag caaggtggcc   1860

acgaagaata gaaatatcct gagctttgag tgtcctttca cagagtgaac aaaactggtg   1920

tggtgtagac acggcttctt ttggcatatt ctagatcaga cagtgtcact gacaaacaag   1980

agggacctgc tggccagcct ttgttgtgcc caaagatcca gacaaaataa agattcaaag   2040

ttttaattaa aaaaaaaaa aaaggaattc                                     2070
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<210> 11 <211> 113 <212> PRT <213> Rattus rattus <400> 11

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Phe Pro Pro Thr Phe Lys Glu Thr Ser Gln Leu Lys Thr Lys Leu Pro
1               5                   10                  15

Glu Asn Leu Ser Ser Lys Ile Lys Leu Leu Gln Leu Tyr Ser Glu Ala
            20                  25                  30

Ser Val Ala Leu Leu Lys Leu Asn Asn Pro Lys Gly Phe Pro Glu Leu
        35                  40                  45

Asn Lys Gln Thr Lys Lys Asn Met Ser Ile Ser Gly Lys Glu Leu Ala
    50                  55                  60

Ile Ser Pro Ala Tyr Leu Leu Trp Asp Leu Ser Ala Ile Ser Gln Ser
65                  70                  75                  80
```

-18-

Lys Gln Asp Glu Asp Val Ser Ala Ser Arg Phe Glu Asp Asn Glu Glu
                85   90   95

Leu Arg Tyr Ser Leu Arg Ser Ile Glu Arg His Asp Ser Met Ser Pro
            100   105   110

Leu

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taaccccaaa ggtttccccg agctgaacaa gcagaccaag aagaacatga gcatcagtgg   180

gaaggaactg gccatcagcc ctgcctatct gctgtgggac ctgagcgcca tcagccagtc   240

caagcaggat gaagatgtgt ctgccagccg cttcgaggat aacgaagagc tgaggtactc   300

actgagatct atcgagagac atgattccat gagtccttta tgaattctgg ccatatcttc   360

aatcatgatc tcagtagtat tcctctgaaa tggcacacat ttttctaatg agaacttgaa   420

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<210> 13 <211> 502 <212> PRT <213> Drosophila melanogaster <400> 13
Gly Thr Arg Arg Phe Asp Asp Lys Asn Glu Leu Arg Tyr Ser Leu Arg
1   5   10   15

Ser Leu Glu Lys His Ala Ala Trp Ile Arg His Val Tyr Ile Val Thr
            20   25   30

Asn Gly Gln Ile Pro Ser Trp Leu Asp Leu Ser Tyr Glu Arg Val Thr
        35   40   45

Val Val Pro His Glu Val Leu Ala Pro Asp Pro Asp Gln Leu Pro Thr
    50   55   60

Phe Ser Ser Ser Ala Ile Glu Thr Phe Leu His Arg Ile Pro Lys Leu
65   70   75   80

Ser Lys Arg Phe Leu Tyr Leu Asn Asp Asp Ile Phe Leu Gly Ala Pro
                85   90   95

Leu Tyr Pro Glu Asp Leu Tyr Thr Glu Ala Glu Gly Val Arg Val Tyr
            100   105   110

Gln Ala Trp Met Val Pro Gly Cys Ala Leu Asp Cys Pro Trp Thr Tyr
            115   120   125

-19-

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Ile Gly Asp Gly Ala Cys Asp Arg His Cys Asn Ile Asp Ala Cys Gln
    130                 135             140

Phe Asp Gly Gly Asp Cys Ser Glu Thr Gly Pro Ala Ser Asp Ala His
145             150             155                 160

Val Ile Pro Pro Ser Lys Glu Val Leu Glu Val Gln Pro Ala Ala Val
                165             170             175

Pro Gln Ser Arg Val His Arg Phe Pro Gln Met Gly Leu Gln Lys Leu
            180             185             190

Phe Arg Arg Ser Ser Ala Asn Phe Lys Asp Val Met Arg His Arg Asn
        195             200             205

Val Ser Thr Leu Lys Glu Leu Arg Arg Ile Val Glu Arg Phe Asn Lys
    210             215             220

Ala Lys Leu Met Ser Leu Asn Pro Glu Leu Glu Thr Ser Ser Ser Glu
225             230             235             240

Pro Gln Thr Thr Gln Arg His Gly Leu Arg Lys Glu Asp Phe Lys Ser
            245             250             255

Ser Thr Asp Ile Tyr Ser His Ser Leu Ile Ala Thr Asn Met Leu Leu
        260             265             270

Asn Arg Ala Tyr Gly Phe Lys Ala Arg His Val Leu Ala His Val Gly
    275             280             285

Phe Leu Ile Asp Lys Asp Ile Val Glu Ala Met Gln Arg Arg Phe His
    290             295             300

Gln Gln Ile Leu Asp Thr Ala His Gln Arg Phe Arg Ala Pro Thr Asp
305             310             315             320

Leu Gln Tyr Ala Phe Ala Tyr Tyr Ser Phe Leu Met Ser Glu Thr Lys
            325             330             335

Val Met Ser Val Glu Glu Ile Phe Asp Glu Phe Asp Thr Asp Gly Ser
            340             345             350

Ala Thr Trp Ser Asp Arg Glu Val Arg Thr Phe Leu Thr Arg Ile Tyr
        355             360             365

Gln Pro Pro Leu Asp Trp Ser Ala Met Arg Tyr Phe Glu Glu Val Val
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Gln Asn Cys Thr Arg Asn Leu Gly Met His Leu Lys Val Asp Thr Val
385   390   395   400

Glu His Ser Thr Leu Val Tyr Glu Arg Tyr Glu Asp Ser Asn Leu Pro
                   405   410   415

Thr Ile Thr Arg Asp Leu Val Val Arg Cys Pro Leu Leu Ala Glu Ala
                   420   425   430

Leu Ala Ala Asn Phe Ala Val Arg Pro Lys Tyr Asn Phe His Val Ser
          435   440   445

Pro Lys Arg Thr Ser His Ser Asn Phe Met Met Leu Thr Ser Asn Leu
     450   455   460

Thr Glu Val Val Glu Ser Leu Asp Arg Leu Arg Arg Asn Pro Arg Lys
465   470   475   480

Phe Asn Cys Ile Asn Asp Asn Leu Asp Ala Asn Arg Gly Glu Asp Asn
                   485   490   495

Glu Asp Gly Ala Pro Ser
              500

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cagccagtgt caccactgtt gatcttaggt tttcacagat cctaaaactt ctgccagtga    2460

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ctccctagct cctctcttgg actccctttc agacttgttg tcatgatcac tgtctcagaa    2580

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Tyr His Val Leu Phe Asp Ser Tyr Arg Asp Asn Ile Ala Gly Lys Ser
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Phe Gln Asn Arg Leu Cys Leu Pro Met Pro Ile Asp Val Val Tyr Thr
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Trp Val Asn Gly Thr Asp Leu Glu Leu Leu Lys Glu Leu Gln Gln Val
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Arg Glu His Met Glu Glu Glu Gln Arg Ala Met Arg Glu Thr Leu Gly
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Lys Asn Thr Thr Glu Pro Thr Lys Lys Ser Glu Lys Gln Leu Glu Cys
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Leu Pro Ala Thr Ile Thr Leu Lys Asp Leu Pro Thr Leu Tyr Pro Ser
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Ile Glu Arg His Ala Pro Trp Val Arg Asn Ile Phe Ile Val Thr Asn
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Gly Gln Ile Pro Ser Trp Leu Asn Leu Asp Asn Pro Arg Val Thr Ile
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Val Thr His Gln Asp Ile Phe Gln Asn Leu Ser His Leu Pro Thr Phe
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Ser Ser Pro Ala Ile Glu Ser His Ile His Arg Ile Glu Gly Leu Ser
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Gln Lys Phe Ile Tyr Leu Asn Asp Asp Val Met Phe Gly Lys Asp Val
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Trp Pro Asp Asp Phe Tyr Ser His Ser Lys Gly Gln Lys Val Tyr Leu
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Gly Gly Gly Ile Asn Thr Ile Ser Tyr Cys Asn Gln Gly Cys Ala Asn
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Cys Gly Phe Asp Ala Gly Asp Cys Gly Gln Asp His Phe His Glu Leu
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Tyr Lys Val Thr Leu Leu Pro Asn Gln Thr His Tyr Val Val Pro Lys
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Gly Glu Tyr Leu Ser Tyr Phe Ser Phe Ala Asn Ile Ala Arg Lys Arg
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Ile Glu Gly Thr Tyr Ser Asp Asn Pro Ile Ile Arg His Ala Ser Ile
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Glu Phe Lys Ile Gln Ile Ala Val Glu Val Asp Thr Arg Glu Ala Pro
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Lys Leu Asn Ser Thr Thr Gln Lys Ala Tyr Glu Ser Leu Val Ser Pro
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Val Thr Pro Leu Pro Gln Ala Asp Val Pro Phe Glu Asp Val Pro Lys
            660   665   670

Glu Lys Arg Phe Pro Lys Ile Arg Arg His Asp Val Asn Ala Thr Gly
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Arg Phe Gln Glu Glu Val Lys Ile Pro Arg Val Asn Ile Ser Leu Leu
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Pro Lys Glu Ala Gln Val Arg Leu Ser Asn Leu Asp Leu Gln Leu Glu
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Arg Gly Asp Ile Thr Leu Lys Gly Tyr Asn Leu Ser Lys Ser Ala Leu
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Leu Arg Ser Phe Leu Gly Asn Ser Leu Asp Thr Lys Ile Lys Pro Gln
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Ala Arg Thr Asp Glu Thr Lys Gly Asn Leu Glu Val Pro Gln Glu Asn
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Pro Ser His Arg Arg Pro His Gly Phe Ala Gly Glu His Arg Ser Glu

-29-

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Pro Thr Leu Gly Val Thr Val Ser Lys Glu Asn Leu Ser Pro Leu Ile
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Val Pro Pro Glu Ser His Leu Pro Lys Glu Glu Glu Ser Asp Arg Ala
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Glu Gly Asn Ala Val Pro Val Lys Glu Leu Val Pro Gly Arg Arg Leu
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Gln Gln Asn Tyr Pro Gly Phe Leu Pro Trp Glu Lys Lys Lys Tyr Phe
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-33-

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Ser His His Ala Ala Val Arg Thr Phe Val Ser His Phe Glu Gly Arg
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Ala Val Ala Gly His Leu Thr Arg Val Ala Asp Pro Leu Arg Thr Phe
65                  70                  75                  80

Ser Val Leu Glu Pro Gly Gly Ala Gly Gly Cys Gly Gly Arg Ser Ala
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Ala Ala Thr Val Glu Asp Thr Ala Val Arg Ala Gly Cys Arg Ile Ala
                100                 105                 110

Gln Asn Gly Gly Phe Phe Arg Met Ser Thr Gly Glu Cys Leu Gly Asn
            115                 120                 125

Val Val Ser Asp Gly Arg Leu Val Ser Ser Ser Gly Gly Leu Gln Asn
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-35-

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Ser Gly Val Val Trp Leu Ile Arg Asn Gly Asn Ile Tyr Ile Asn Glu
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Ser Gln Ala Ile Glu Cys Asp Glu Thr Gln Glu Thr Gly Ser Phe Ser
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Lys Phe Val Asn Val Met Ser Ala Arg Thr Ala Val Gly His Asp Arg
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Glu Gly Gln Leu Ile Leu Phe His Ala Asp Gly Gln Thr Glu Gln Arg
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Gly Leu Asn Leu Trp Glu Met Ala Glu Phe Leu Arg Gln Gln Asp Val
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Val Asn Ala Ile Asn Leu Asp Gly Gly Gly Ser Ala Thr Phe Val Leu
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Asn Gly Thr Leu Ala Ser Tyr Pro Ser Asp His Cys Gln Asp Asn Met
    275             280             285


Trp Arg Cys Pro Arg Gln Val Ser Thr Val Val Cys Val His Glu Pro
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Arg Cys Gln Pro Pro Asp Cys Ser Gly His Gly Thr Cys Val Asp Gly
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His Cys Glu Cys Thr Ser His Phe Trp Arg Gly Glu Ala Cys Ser Glu
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Leu Asp Cys Gly Pro Ser Asn Cys Ser Gln His Gly Leu Cys Thr Ala
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Gly Cys His Cys Asp Ala Gly Trp Thr Gly Ser Asn Cys Ser Glu Glu
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Cys Pro Leu Gly Trp Tyr Gly Pro Gly Cys Gln Arg Pro Cys Gln Cys
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Glu His Gln Cys Phe Cys Asp Pro Gln Thr Gly Asn Cys Ser Ile Ser
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-38-

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-39-

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-40-

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cacgagagtt ggcctccgcc tcccgcgact cccggcgccg gcggtctggc cgtgcgcacc     240

ttcgtgtcgc acttcaggga ccgcgcggtg gccggccacc tgacgcgggc cgttgagccc     300

ctgcgcacct tctcggtgct ggagcccggt ggacccggcg ctgcgcggc gagacgacgc      360

gccaccgtgg aggagacggc gcgggcggcc gactgccgtg tcgcccagaa cggcggcttc     420

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gagcagcgtg gcatcaacct gtgggaaatg gcggagttcc tgctgaaaca ggacgtggtc     840

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-41-

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gactgtggcc cctctaactg cagccagcac ggactgtgca cggagaccgg ctgccgctgt     1140

gatgccggat ggaccgggtc caactgcagt gaagagtgtc cccttggctg gcatgggccg     1200

ggctgccaga ggccttgtaa gtgtgagcac cattgtccct gtgaccccaa gactggcaac     1260

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1               5                   10                  15

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1               5                   10
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1               5                   10
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Lys Phe Gly Phe Thr Ser Arg Lys Val Pro Ala His
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1   5

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-43-

Lys

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Asn Val Ala Lys Pro Lys
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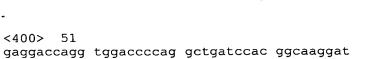
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<400> 51
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<210> 52 <211> 13 <212> PRT <213> Homo sapiens <400> 52

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1   5   10